Remarks

The Examiner will note that the claims presented herein remain unchanged from those presented in Applicant's response of August 3, 2004 to the Office Action mailed May 4, 2004 since Applicant is of the view that the claims as presently pending in this application define an invention which is both novel and not rendered obvious by the prior art of record. Consequently, Applicant retains as pertinent the entirety of the previous response but makes the following further observations for the Examiner's consideration.

Referring firstly to independent claims 1 and 10, the Examiner has rejected these claims under 35 U.S.C. §102(e) on the basis that they are anticipated by Casey (US6493349).

The Examiner contends that Casey discloses a "*communications multi-service network*" making reference to Casey column 2, line 67. In addition, the Examiner has rejected Applicant's argument as previously presented that Casey does not disclose a multi-service network as would be understood by a skilled addressee from the content of the present application as filed through his assertion in the "Response to Arguments" section of the present Office Action that Fig. 3 of Casey shows that Casey's network is a multi-service network to a person of ordinary skill in the art at the time the invention is made. However, the Examiner has made no attempt to define in what way Fig. 3 of Casey discloses a "multi-service" network beyond the broad assertion that it does so and has completely ignored the reference in the present application as filed at page 2, lines 7 to 10 to the Multiservice Switching Forum Contribution Number MSF 99.245 which provides context for the present application.

It is clear from the present application that a multi-service network is one in which at least a core part of the network is capable of handling traffic using different protocols. In the particular arrangement of the present invention as defined by claims 1 and 10, this comprises a communications network in which, in a core part of the network, IP services are delivered using a frame based protocol such as MPLS whereas legacy services are accommodated through emulated ATM services over said same core network part as is illustrated by figure 9 of the present application.

Referring to column 2, line 67 of Casey, it is disclosed that a VPN is a group of individual private networks logically connected through one or more shared networks. However, it would be a mistake to conclude that the term "shared" is equivalent to "multi-service" since Casey discloses that the "shared" network is partitioned into at least two distinct areas. In fact, Fig. 3 of Casey discloses that the shared network is partitioned into six distinct areas including an MPLS backbone area. Different networks protocols are implemented in each of said distinct areas (column 2, lines 61 and 62). There is no suggestion here that any of the distinct areas operates more than one protocol, a point that will be addressed more fully below.

The Examiner also contends that Casey discloses "*a plurality of nodes interconnected via a plurality of quality of service capable tunnels and incorporating a frame-mode MPLS architecture whereby IP services are run directly over a frame-based core part of said multi-service network and legacy services are run over ATM adaptations and emulated ATM services on said core part of the network*" referring collectively to Casey column 3, lines 2-3, Fig. 2, column 3, lines 38 to 40 and column 7, line 16.

Firstly, it should be noted from Casey, column 3, lines 2-3 that the tunnels are formed between VPN routers which are members of a common VPN, i.e. routers within a distinct VPN area of the partitioned shared network. This is further

illustrated by Fig. 2 which demonstrates that tunnel do not across the boundaries between the distinct areas of the shared network.

Secondly, it should be noted that Casey, column 3, lines 36 to 40 does not show what is contended by the Examiner but something quite different. Here, Casey discloses that the Provider of the shared, i.e. partitioned, network can operate a MPLS based IP VPN area in the backbone while using other forms of IP VPN technology in the distinct regional VPN areas that surround the backbone. These are the different protocols referred to at column 2, line 63. Thus, each VPN area uses a single IP VPN technology which may be different for each such area as particularly illustrated by Fig. 3. There is no suggestion here or in Fig. 3 that any of the distinct VPN areas, never mind the backbone area, is intended to operate more than one IP VPN technology. Thus, Casey does not disclose the feature of the present invention of "*a frame-mode MPLS architecture whereby IP services are run directly over a frame-based core part of said multi-service network and legacy services are run over ATM adaptations and emulated ATM services on said core part of the network*".

Further, the reference in Casey at column 3, lines 43-44 that the backbone could employ one of the listed IP VPN technologies is clearly a reference to the backbone employing a selected one of such listed technologies instead of MPLS rather than in addition to it.

Also, Casey does not disclose "*the multi-service network further comprising one or more virtual switches for switching data traffic, each virtual switch comprising managed switching resources from a number of said interconnected nodes*". In Casey, the distinct VPN areas are linked by VBRs (Virtual Border Routers) whose roll is not only to act as tunnel entrance and exit points for the VPNs it connects but to perform protocol conversion as appropriate between connected VPNs. The VBRs may also perform functions such as firewalls etc. Consequently, while a distinct VPN

area of Casey does comprises a plurality of routers connected by tunnels, all of said routers and connecting tunnels are contained within said VPN with a VBR being provided to connect said VPN area to another VPN area. A VPN area as taught by Casey cannot be considered equivalent or even suggestive of a virtual switch comprising managed switching resources from a number of core network nodes as defined in claims 1 and 10 of the present application. In the present invention, a virtual switch comprises a service node connected to an abstract node, said abstract node itself comprising a plurality of core nodes. There is no requirement in the present invention to partition abstract nodes and thus virtual switches by placing such switches behind border routers or the like as taught by Casey.

In view of the foregoing, Casey fails to teach or suggest many significant features of the present invention as defined by claims 1 and 10 and thus the rejection of these claims under 35 U.S.C. §102(e) cannot be sustained.

Referring now to claims 2 and 11, the discussion above with respect to the term "multi-service" is pertinent and is sufficient in itself to traverse the rejection of these independent claims.

Notwithstanding the latter point, there is no concept of abstract nodes in Casey. An abstract node is a logical grouping of nodes where each such node shares the same IP address prefix and thus, from a network management point of view, can be considered as a single logical node. It is to be expected that such nodes will be adjacent each other within the network. A VPN has no such limitation and employs path identifiers and channel identifiers as a means of identifying nodes comprising the VPN.

Similar arguments can be presented in favor of independent claims 18 and 21 and indeed the arguments previously presented in the examination procedure to date remain pertinent.

The Examiner's rejection of various dependent claims under 35 U.S.C. §103(a) is moot in view of the foregoing.

Favorable reconsideration of the claims is therefore requested.

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Respectfully submitted,

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